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## P R E F A C E.

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THE Committee of Correspondence and Papers have great pleasure in reporting to the Society the success of their endeavours to expedite the preparation of the annual Volume of Transactions. There can be but one opinion respecting the advantages to be derived from early publication, both as respects the interests of the Society and of those whose meritorious exertions for the benefit of the community have been rewarded during the preceding Session. From the commencement of the vacation in the middle of last June to the present time, the Committee of Correspondence and Papers have continued their labours, with an intermission of only six weeks, in order to fulfil the wishes of the Society. These labours include the arrangements with the draftsmen and engravers employed, and the critical examination of the productions of

both these classes of artists, also the general superintendence of the preparation of the papers for the press, and a multitude of other particulars which it is unnecessary here to detail. They trust the Society will find, that they have performed the duty committed to them with care and fidelity and with all possible expedition.

With the public at large, and with those members who, from residence in the country, or from other circumstances, are not in the habit of giving their personal attendance at the meetings of the Society and of the Committees, the annual Volume is our only means of communication ; hence has arisen the practice of prefacing it by a brief summary of its contents, together with such remarks as may be necessary to put the reader in possession of the motives and objects by which the Society have been actuated in the bestowal of their rewards.

In the Class of Agriculture and Rural Economy will be found two Communications on the subject of Planting Forest Trees. That from Lieut.-Col. Wildman, of Newstead Abbey, is important, both on account of the extent of land thus profitably

occupied, and also from some successful novelties of practice, applicable to many of the sandy districts in the midland and eastern counties of England. That from Capt. Hawkins, of Kingsbridge, Devon, shows that to clear away the gorse and other undergrowth, previous to making a plantation, is, in certain situations at least, not only to incur an unnecessary expense, but is actually injurious to the early progress of the young plants.

The exertions of the Society from time to time, in order to encourage the cultivation of the White Poppy and the collection of Opium from it, have been attended with signal success. Messrs. Cowley and Staines, of Winslow, have again obtained the Premium for the production of the largest quantity of Opium, being no less than 143 lbs. Mr. Jeston's Paper on the same subject will be found very valuable as establishing the most expeditious and economical mode of collecting the Opium, and one which entirely obviates the hazard arising from the fickleness and uncertainty of our climate. The Opium produced by both these parties is not only more free from casual impurities than the foreign, but in medical efficacy is at least equal to the very

best in the market. This is proved, not only from the high price that has been obtained for it, but from the testimony of professional men of extensive practice and eminent experience. It may reasonably be expected, therefore, that in the course of a few years there will be no necessity of having recourse to foreign countries for this very important article of the *materia medica*.

Mr. Taunton has obtained the Premium offered by the Society for the production of a variety of Horse Beans, which shall ripen sufficiently early in the year to allow the ground on which it grew to have a Summer Fallow after the collection of the crop.

In the Class of Chemistry will be found a Communication respecting the improved Melting Pots manufactured by Mr. Marshall of Newcastle; and another from Mr. J. T. Cooper, of Lambeth, on the construction of his Hydrometer for Saline Solutions; both of which will be found of use to the practical chemist and the manufacturer. The last-named gentleman has also been rewarded for a very ingenious Apparatus for the ultimate analysis

of Organic and other compound Products, which greatly facilitates inquiries into this interesting and, as yet, very imperfectly explored department of science. Mr. Gurney's Oxy-hydrogen Blow-pipe will be found greatly to diminish the risk hitherto attending the use of the mixed gasses as a means of producing the highest degrees of heat; and Mr. Marsh, by condensing in a very portable form the Apparatus necessary for Researches in Electro-Magnetism, has not only brought it within a moderate cost, but has greatly facilitated the power of investigating the laws of this science in situations which, from their locality, are likely to produce very interesting results.

In the Class of Polite Arts the most interesting article is no doubt that which relates to the experiments by the late Mr. Warren, on the Art of Engraving on Steel Plate. The untimely death of this eminent artist has deprived the Society and the Public of a complete Communication from himself on the subject; but care has been taken, by consulting those who were the best acquainted with his mode of practice, to compile a statement of the processes employed by him, which, it is

believed, is correct, although, doubtless, neither so interesting nor so fully detailed as it would have been if his valuable life had been longer lent to his family and to his art.

Mr. Brockedon's Rest for the use of Painters will be found in many situations an advantageous substitute for the common Maul-stick ; Mr. Harris's application of the Syringe to the purpose of containing Oil Paint for the use of Artists has received the approbation of several professional men. Mr. Deeble's method of taking Casts of Leaves and Foliage, though not new in all respects, is by no means generally known ; and will produce representations of these objects (as the specimens in possession of the Society demonstrate) alike remarkable for their fidelity and spirit.

In the Class of Manufactures are two Communications : the first of these, Mr. Shenton's improved Engine for Tramming Silk, avoids many of the inconveniences incident to the machines for this purpose in common use. The second article, being a communication from Mr. Cobbett, on Plat made from English Grass, requires a few

words of explanation. In the former Volume of the Society's Transactions is a Communication from Mrs. Wells, of Connecticut, on the use of the stems of a particular species of grass, a native of the New England States of N. America, as a material for fine plat. The specimens produced before the Society were so excellent both in colour and other desirable qualities, as to occasion a considerable reward to be offered to Mrs. Wells, on condition of her furnishing the Society with the particulars of her mode of preparing the grass, and with a certain quantity of the seed for the purpose of endeavouring to naturalize it in this country, and thus securing to ourselves the possession of a material which, when worked by our own people into plat of the same texture and pattern as that imported from Leghorn, might revive this decaying branch of our national industry. Mr. Cobbett, being informed of the proceedings in the Society on this subject, was of opinion that several of our native grasses are in all probability as well adapted to the plat manufacture as the New England grass. He accordingly instituted experiments on the subject, the successful result of which is contained in his very interesting communication inserted in the present Volume.

In the Class of Mechanics, the highest reward, the Large Gold Medal, has been given to Mr. Jas. Jones for his Kiln for Drying Grain ; the great superiority of which over those in common use is evident, not only from the Certificate which accompanies the Communication, but from the structure of the machine. Its powers as compared with those in common use are as twelve to one, and all the manual labour of charging and discharging the kiln is saved.

Mr. Amesbury has invented an Apparatus to be used in cases of Fracture of the Lower Limbs, the special intention of which is, to support the limb so as to prevent the fractured parts from being displaced by external accidents or by the involuntary contraction of the muscles ; hence the time of confinement to bed is greatly shortened, and the patient is allowed the benefit of exercise on crutches or in a carriage, in aid of the usual powers of nature to effect reunion of the broken bone. An invention analogous in its object to the preceding is Mr. Raynes's ingenious cap to support the knee in cases of Dislocated or Fractured Patella.

Mr. Siebe has invented a simple and convenient Tap for Hollow Screws of the commoner kinds, by

which they can be made by the same instrument either right or left-handed, and with one, two, or three threads, according to the uses for which they are intended.

Mr. Speer has proposed a Mode of Stopping Revolving Machinery when running too quick, by taking advantage of the centrifugal divergency of two hooks fixed on the axis of motion, which when expanded fasten on a fixed bar and thus bring the machine to rest.

Capt. Wilkinson, R. M. has invented a well-arranged Chest to contain the Arms of Marines on board ship, by which they are secured from injury themselves, and from wounding the men when taken out hastily, particularly at night, as is but too frequently the case with the inconvenient chests in which they are usually deposited.

That no opportunity may be neglected by the Society of alleviating as far as is in their power the perils incident to sea-faring persons, two Communications have been inserted in the present Volume. One is an Apparatus proposed by Mr. Dennett as

more efficacious in Baling Leaky Ships than the canvass buckets at present resorted to; the other is a very ingenious modification of the Common Kite, in order to effect a Communication between a Stranded Ship and the Shore, invented by Capt. Dansey, R. Art.

Mr. Evans's Mode of Combining and Regulating the Strain of different Tackles applied to lifting the same weight, will, it is hoped, be found to be useful in our dock yards and other situations where articles of very unequal weight are required to be raised.

Mr. Elliott's Apparatus for conveying away the Dust occasioned by Dry-grinding articles of Iron and Steel will be found to be more simple than others heretofore rewarded by the Society, and it is hoped may contribute to the relief of that class of artizans for whom it is intended.

Mr. Pechey's Mangle will be found to effect the alternate motion of the box and rollers, by means of the continued revolution of the handle in one direction, through the medium of a simpler contrivance than has hitherto been applied to this purpose.

Lieut. Green's proposed Improvements in the Rigging of Ships are submitted to the consideration of those who are professional judges of them.

In the Class of Colonies and Trade, the sum of Fifty Guineas has been given to Mr. J. F. Denovan, of Aberdour, in Fifeshire, for his Improvements in the mode of Salting White Herrings, and for his successful competition with the Dutch fishers in the market of Hamburg. This is the third reward of similar value which has been granted to Mr. Denovan, and the Society have ample reason to be satisfied with the result. Buffeted by repeated adverse accidents, this active and skilful fisher has nevertheless persevered in his useful enterprise. For two successive years he has by his activity and the intrinsic superiority of his fish, carried off the prime prices at the Hamburg market; and has communicated to the Society, and through the Society to the public, all the particulars of his manner of curing the celebrated herrings of the West of Scotland, and of rendering them not merely equal, but decidedly superior, to Dutch herrings, which though cured probably with equal skill, are naturally and essentially an inferior variety of fish. In confirm-

tion of this it may be allowed to state, that in his last letter he mentions having received a small order for his herrings to be sent to Batavia.

The last article on the list is a letter from Mr. Blaxland, relative to a small cargo of wine made from the Claret Grape cultivated in his vineyard in New South Wales. It was well worth while for the Society to mark and authenticate by its medal the date of the first importation of wine from that flourishing colony into the parent country. Its quality is such as to give well-grounded expectations of its forming a valuable article of trade in the Indian and perhaps in the British market, when age shall have diminished the rampant vigour of the young stocks, and experience shall have pointed out the most advantageous mode of fermenting the wine, and of its subsequent treatment previous to exportation.